Periscope.

With the Assistance of the Following Collaborators:

Chas. Lewis Allen, M.D., Wash., D.C.
J. S. Christison, M.D., Chicago, Ill.
A. Freeman, M.D., New York.
S. E. Jelliffe, M.D., New York.
Wm. C. Krauss, M.D., Buffalo, N.Y.
R. K. Macalester, M.D., N.Y.
J. K. Mitchell, M.D., Phila., Pa
H. Patrick, M.D., Chicago, Ill.
Henry L. Shively, M.D., N. Y.
A. Sterne, M.D., Indianapolis.
W. M. Leszynsky, M.D., New York.

NEUROPATHOLOGY.

Ascending Neuritis from Scar Pressure.

M. M. Carrière et Rainguet (Gaz. Hebd. de Méd. et de Chir., May 27th ,1897) reported a case of ascending neuritis following traumatism.

E. L., aged forty-six, farmer, entered the hospital a few days ago for pain in the left foot and ulceration of the little toe.

At ten years of age he gave himself a blow with a hatchet at the top of the fourth left interosseous space, about 5 c.m. in length. A month after, the wound had healed.

In the course of the third year, the patient began to suffer from tumefaction of the great toe. Some days afterwards the pains appeared at the top of the little toe. From this time the attacks of pain occurred from time to time, and in the month of March, the patient having ascertained that the condition was one of progressive necrosis of the left little toe, decided to enter the hospital.

After having eliminated, by a careful examination, tabes, Raynaud's disease and Friedreich's disease, the case was decided to be one of ascending neuritis of traumatic origin, of which the causal agent was the blow already spoken of.

The point commended upon was the tardy appearance of the results; and the fact is explicable only in admitting the production of a hardened cicatrix, the contracted tissue of which had surrounded the nerve supplying the little toe, thus producing an ascending neuritis.

Mitchell.

Pathologie Generale de la Cellule Nerveuse, Lesions Secondaires et Primitives. Marinesco. (La Presse Médicale, April 27th, 1897.)

Referring to a previous article, in which he set out to show that lesions of the nerve cells secondary to nerve section have a special character which distinguishes them from those due to causes acting primarily upon the cell itself, Marinesco returns to the same task, supporting his conclusions upon the results of newer experiments by himself and others. Section of a nerve is followed by modification of the cells of its centre of origin, which constitutes what he calls "reaction at distance." This reaction occurs in all animals—

though its rapidity depends upon the sort of animal—and takes place always in a uniform manner. Three phases are to be distinguished: that of reaction, that of degeneration, and—where the cell recovers—that of repair. In the structure of the cell he recognizes three elements: (a) the fundamental achromatic substance, (b) corpuscles having affinity for basic dyes, the chromatophile elements, and (c) a fibrillary or striated substance. The alterations affect especially the achromatic substance—"tropho-plasma," and the chromatophile elements—"kynéto-plasma." The phase of reaction begins with disintegration of the chromatophile elements, especially about the point of origin of the axis cylinder. In a later stage, this "chromatolysis" extends to the greater part of the cell, and the nucleus is found to have moved from the centre of the cell to its periphery. As the change proceeds, the delicate striation of the cell and of its protoplasmic processes is lost, and the chromatophile elements are reduced to a fine dust. Section of a sensory nerve is followed by similar changes in the cells of its ganglion.

When the sensory root is cut peripherally from the ganglion, the changes are much greater than when the portion between the ganglion and cord, or the posterior columns of the cord are cut. Certain cells being unable to recover, the change in them goes on to degeneration, and they atrophy and disappear. To determine how repair takes place, Marinesco examined the medullæ of rabbits, killed 24, 46, 63 and 90 days after section of the hypoglossal nerve. The phenomena of repair already marked at the end of 24 days, consisted in hypertrophy of the affected cells, with new formation of the chromatophile elements, beginning especially about the nucleus which still occupied an eccentric position. By their great size, and their deeeper staining, the regenerating cells could be distinguished even under low magnifying power, from those of the unaffected nucleus. This slow hypertrophy was shown through the whole series of observations, and was still going on 90 days after the nerve section. The author thinks that the same changes in the cells occur as a result of neuritis. Selecting the large cells of the anterior horn of the cord for sake of uniformity, he has studied their primary changes in experimental anæmia, hydrophobia, botulism and tetanus. The lesion in each case he describes somewhat at length. Summarized, they affect both chromatophile and achromatic substance. "Chromatolysis" may be peripheral, perinuclear, or diffuse, the different forms predominating in different diseases. The nucleus has not the same tendency to seek the periphery of the cell as in secondary lesions. The changes in the achromatic substance are two-fold—molecular disintegration, and coagulation and transformation into a glassy material. Another modification is increased affinity for dyes on the part of the achromatic substance. A change to which the author attaches much importance, is an increase in number of the neuroglia cells, which seems to be in direct relation to the amount of change in the achromatic substance. Alteration of the neuroglia and the vessels he finds pretty constantly present in primary lesions, while in lesions secondary to nerve injury they are absent. On this latter fact, and on the difference in character in cell alterations, he feels able to distinguish the two classes of lesions, primary and secondary. The different appearances of the cells in these two classes of lesions, and also in different diseases, are illustrated by enlarged colored figures, showing the cell as it appears when stained by Nissl's method. In conclusion, the author emphasizes the importance of the pathology of the nerve cell, and expresses the hope that its further study may lead to the establishment, some day, of a system of cellular therapeutics.

C. L. Allen.